

**WHAT IS CLAIMED IS:**

1        1.     A composite push rod comprising:  
2        a hollow composite bar, a first end fitting bonded to a first end of said  
3        composite bar, a second end fitting bonded to a second end of said  
4        composite bar, both said first and second end fittings provided with a  
5        rounded end; and

6        said second end fitting adjustable in length.

1        2.     A composite push rod according to Claim 1 wherein said hollow  
2        composite bar further comprises:

3        an inner portion of said bar constructed of multiple layers of sheets of  
4        thermosetting, epoxy impregnated, longitudinally oriented fiber material,  
5        and

6        an outer portion of said bar constructed of a single layer of a sheet of  
7        thermosetting, epoxy impregnated, woven fiber material.

1        3.     A composite push rod according to Claim 2 wherein the inner  
2        portion of the bar consists of between 5 and 50 layers of sheets of  
3        thermosetting, epoxy impregnated longitudinally oriented fiber material.

1        4.     A composite push rod according to Claim 3 wherein the first and  
2        second end fittings are each provided with a bore that extends through its  
3        corresponding fitting, and the bores that are provided in the fittings are  
4        continuous with an internal bore provided in the hollow bar so that there is  
5        a continuous bore through the bar and its bonded end fittings.

1        5.     A composite push rod according to Claim 1 further comprising:  
  
2        the first and second ends of the composite bar each provided with a  
3        beveled surface, a mating beveled surface provided on each of the first  
4        and second end fittings, said

5        mating beveled surfaces provided on the end fittings where the fittings  
6        bond to an end of the composite bar.

1        6.     A composite push rod according to Claim 5 wherein the beveled  
2        surface provided on each of the first and second ends forms an angle of  
3        approximately 45 degrees with a longitudinal axis of the rod.

1        7.     A composite push rod according to Claim 5 further comprising:

2        a tube provided on each end fitting where the fitting bonds to an end of the  
3        composite bar so that the tube inserts into a bore provided in the bar when  
4        the end fitting is bonded to its corresponding end of the bar.

1        8.     A composite push rod according to Claim 5 wherein the first and  
2        second end fittings are each provided with a bore that extend through the  
3        fitting and the bores are continuous with an internal bore provided in the  
4        hollow bar so that there is a continuous bore through the bar and its  
5        bonded end fittings.

1        9.     A composite push rod according to Claim 5 wherein said hollow  
2        composite bar further comprises:

3        *an inner portion of said bar constructed of multiple layers of sheets of*  
4        *thermosetting, epoxy impregnated, longitudinally oriented fiber material,*  
5        *and*

6        *an outer portion of said bar constructed of a single layer of a sheet of*  
7        *thermosetting, epoxy impregnated, woven fiber material.*

1        10. A composite push rod according to Claim 9 wherein the inner  
2        portion of the bar consists of between 5 and 50 layers of sheets of  
3        thermosetting, epoxy impregnated longitudinally oriented fiber material.

1        11. A composite push rod according to Claim 5 further comprising:  
  
2        the first and second ends of the composite bar each provided with a flat  
3        second surface that mates with a flat second mating surface provided on  
4        each of the first and second end fittings, said  
  
5        flat second mating surfaces provided on the end fittings where the fittings  
6        bond to an end of the composite bar.

1        12. A composite push rod according to Claim 11 wherein the flat  
2        second surface provided on each of the first and second ends of the  
3        composite bar is approximately perpendicular to a longitudinal axis of the  
4        bar.